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AN
INAUGURAL DISSERTATION,
ON THE
POLYGALA SENECA,
COMMONLY CALLED

Seneca Snake-Root:

SUBMITTED TO

THE EXAMINATION

OF THE

REV. JOHN EWING, S. S. T. P. PROVOST;

THE

TRUSTEES & MEDICAL FACULTY;

OF THE

University of Pennsylvania,

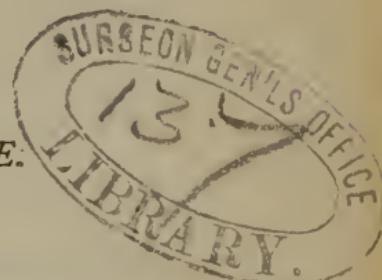
On the 22d day of May, 1798,

FOR THE DEGREE OF

DOCTOR OF MEDICINE.

By ISAAC WINSTON, OF VIRGINIA.

HONORARY MEMBER OF THE PHILADELPHIA MEDICAL SOCIETY,



PHILADELPHIA:

PRINTED BY WAY & GROFF,
No. 27, Arch-street.

1798.

Chap. 10.

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TO

ROBERT HONYMAN, M. D.

THIS

Inaugural Dissertation

IS INSCRIBED,

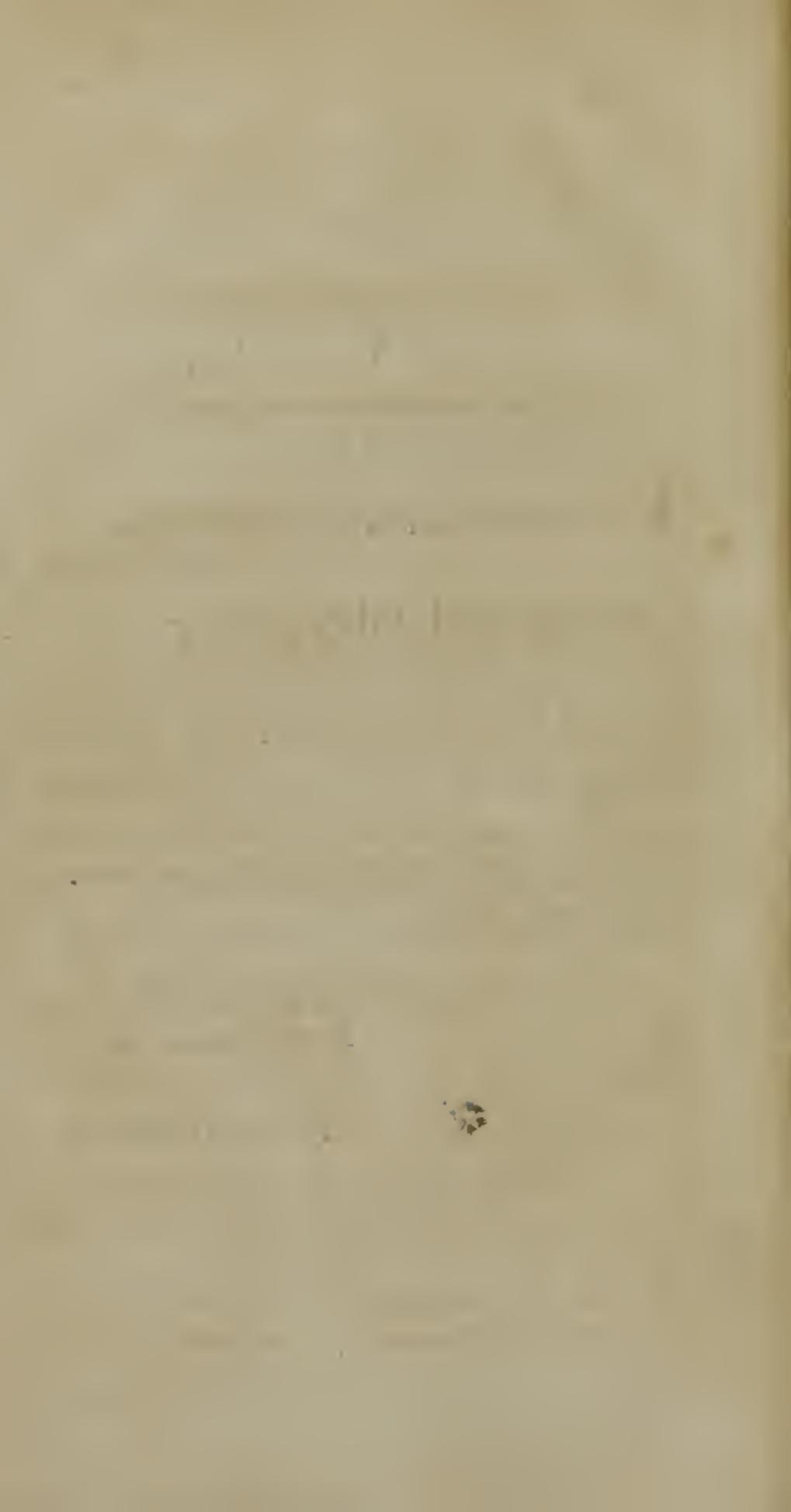
AS A MARK OF THE

SINCERE REGARD AND ESTEEM OF HIS

Friend, and much obliged

Humble Servant,

, THE AUTHOR.



INAUGURAL DISSERTATION, &c.

THE Seneca Snake-Root, called Polygala Senega by the botanists, is found native in many parts of the United States, and particularly in Virginia, Maryland, Pennsylvania, and New-York; and, as far as I have been able to ascertain, was first introduced into the catalogue of medicines by Dr. Tenant of Virginia, in the year 1739, as possessing the singular and wonderful power of curing the disease from the bite of the Rattlesnake.* Hence the name of Rattlesnake-Root.

He enumerates many other diseases, in which he gave it with success, as the pleurify, dropfy, asthma, gout, rheumatism, and marasmus. I shall first shew what are the products which it affords by analysis; secondly, what are its effects, in large and small doses, in substance and in decoction, upon the sound and

* The Seneca Snake-Root appears first to have been used in the disease caused by the bite of the Rattlesnake, by the Seneca-Indians. Hence its name.

healthy body; and, lastly, consider how far it may be applicable to the restoring of health to the body, in certain diseases.

EXPERIMENT 1.

Having reduced one ounce of the Seneca to a fine powder, and infused it, for five hours, in six ounces of water, (and, that I might be sure of extracting all the gum, in boiling water) I filtered and evaporated it.

The product was one scruple and seven grains, of a dark coloured gum, of an acrid and pungent taste, having all the pungency peculiar to the plant, but in a greater degree.

EXPERIMENT 2.

Having submitted one pint of the common spirit of wine of the shops to distillation, in a retort, with four ounces of potash, I drew off four ounces. Of this highly rectified spirit, I poured two ounces on one ounce of the powdered root of the Seneca, and suffered it to remain for six hours; after which time I filtered and evaporated it. The product was eight grains, of a dark coloured resin, of a pleasant taste, having but very little of the acrimony of the plant.

EXPERIMENT 3.

In a crucible, I exposed one ounce of the powdered Seneca, to an heat sufficiently strong to reduce it slowly to ashes. These I suffered to stand, for half an hour in boiling water, after which time I suffered the water to evaporate slowly in a sand bath. The product was fourteen grains of the caustic vegetable alkali. It readily attracted the moisture of the atmosphere, changed a paper stained by a vegetable juice to a green colour, and precipitated the corrosive sublimate, from its solution, of a brick-dust colour.

EXPERIMENT 4.

At nine o'clock, one hour after having breakfasted on bread and butter and coffee, my pulse beating ninety-two strokes in a minute, (that being its natural standard) I took fourteen grains of the powdered Seneca Snake-root, infused in water. In five minutes, my pulse beat 92 strokes in a minute; in ten 92; in fifteen 94; in twenty 96; in twenty-five 97; in thirty 96; in thirty-five 94; in forty 92; in forty-five 92; in fifty-five 92.

The first effect of this dose was to cause a greater secretion of mucus and of saliva by the tonsil and

falillary glands. The next and only other was an increase of the frequency of my pulse, with a slight pricking of my skin, but not attended perceptibly with more than a natural degree of perspiration.

EXPERIMENT 5.

At eleven o'clock, two hours and an half after having breakfasted as before, my pulse beating 92 strokes in a minute, I took twenty-four grains of the Seneca in water; in five minutes, my pulse beat 92 strokes in ~~one~~ minute; in ten ~~92~~, in fifteen 95; in twenty 97; in twenty-five 99; in thirty 100; in thirty-five 101; in forty 99; in forty-five 97; in fifty 94; in fifty-five 92; in sixty 92; in seventy 92.

This dose first occasioned a coughing, from some of the powder adhering to, and irritating my fauces, and as before caused a considerable expectoration of mucus: in twenty minutes I became slightly nauseated, felt a pricking of my skin, which was soon relieved by a gentle flow of perspiration. This continued to increase till I became all over moist: in forty-five minutes I felt slight griping of my bowels, from an accumulation of flatus, but not succeeded by any evacuation by stool. At and after this time I voided considerably more urine than usual.

EXPERIMENT 6.

Two hours and an half after having breakfasted as before, my pulse beating 92 strokes in a minute, I took thirty-four grains of the Seneca in molasses and water; in five minutes, my pulse beat 92 strokes in a minute; in ten 94; in fifteen 97; in twenty 100; in twenty-five 102; in thirty 104; in thirty-five 106; in forty 107; in forty-five 107; in fifty 105; in fifty-five 102; in sixty 99; in sixty-five 97; in seventy 94; in seventy-five 92; in eighty 90; in eighty-five 89; in ninety 90; in ninety-five 92; in one hundred 92; in one hundred and ten 92.

In twenty minutes I was considerably nauseated; my skin became hot, and in ten minutes after moist with perspiration. In fifty minutes, I was more affected than before with cholic and flatulency, but had no evacuation by stool.

The diuretic effect of this dose was much greater than that of the other.

EXPERIMENT 7.

At 12 o'clock, three hours and an half after having breakfasted as usual, my pulse beating 92

strokes in a minute, I took 44 grains of the Seneca in molasses and water. In five minutes my pulse beat 92 strokes in a minute; in ten 95; in fifteen 97; in twenty 100; in twenty-five 102; in thirty 104; in thirty-five 107; in forty 109; in forty-five 110; in fifty 109; in fifty-five 108; in sixty 106; in sixty-five 103; in seventy 100; in seventy-five 97; in eighty 94; in eighty-five 92; in ninety 90; in ninety-five 88; in one hundred 87; in one hundred and five, 89; in one hundred and ten 91; in one hundred and fifteen 92; in one hundred and twenty 92; in one hundred and thirty 92.

Very soon after taking this dose, I felt a slight foreness of my throat, which was increased by constant exertions by coughing and hawking to detach some of the powder, which had adhered to my fauces in swallowing. In 20 minutes I became more nauseated than before; and soon after my skin was covered by an effusion of perspiration: my bowels were very much affected with cholic and flatulency, but still I had no evacuation by stool.* I cannot omit mentioning in this place, that in the urine which I voided during the opera-

* It is a singular fact, and not unworthy of notice, that the Seneca, when given in substance in doses large enough to affect the bowels, never fails to cause flatulency. I have constantly observed this effect to be produced, and the cholic which occurs, may, in part, be attributed to it.

tion of this dose, in quantities greatly exceeding what is usual, I could very distinctly perceive the peculiar odour of the Seneca.

EXPERIMENT 8.

At 10 o'clock, two hours after having breakfasted on bread and butter and chocolate, my pulse beating 92 strokes in a minute, I took 54 grains of the Seneca infused in molasses and water. In five minutes my pulse beat 93 strokes in a minute; in ten 97; in fifteen 103; in twenty 106; in twenty-five 109; in thirty 110; in thirty-five 109; in forty 107; in forty-five 105; in fifty 102; in fifty-five 99; in sixty 97; in sixty-five 95; in seventy 93; in seventy-five 91; in eighty 89; in eighty-five 88; in ninety 89; in one hundred 90; in one hundred and five 92; in one hundred and ten 92; in one hundred and twenty 92.

The result of this experiment differed in nothing from the preceding except in degree. In 15 minutes I became very much nauseated; the action of my pulse was much increased, both in frequency and fulness, and in 30 minutes I was bathed in a profuse sweat: in 50 minutes after, having suffered much from cholic, I had an evacuation by stool; and in 60 another. I had several copious evacuations of urine, and in it also the odour of the Seneca was very evident.

EXPERIMENT 9.

At five o'clock P. M. three hours after having dined on roasted beef, boiled fowl, &c. having avoided all stimulating drinks during my meal, I took 70 grains of the Seneca in molasses and water ; my pulse beat as usual 92 strokes in a minute. In five minutes my pulse beat 94 in a minute ; in ten 97 ; in fifteen 101 ; in twenty 105 ; in twenty-five 108 ; in thirty 111 ; in thirty-five 113 ; in forty-five 110 ; in fifty 108 ; in fifty-five 105 ; in sixty 101 ; in sixty-five 99 ; in seventy 97 ; in seventy-five 93 ; in eighty 91 ; in eighty-five 89 ; in ninety 87 ; in ninety-five 86 ; in one hundred 87 ; in one hundred and five 89 ; in one hundred and ten 91 ; in one hundred and fifteen 92 ; in one hundred and twenty 92 ; in one hundred and thirty 92.

In 15 minutes I became very sick at my stomach, insomuch, that I found great difficulty in refraining from puking. This sickness was soon accompanied with a distressing head-ach ; soreness of my throat ; a feverish heat ; and in ten minutes more, by a profuse sweat. In thirty-five minutes, I had become so sick that I was forced to throw up the contents of my stomach. It is probable, at this time, that I discharged the greater part of the dose which I had taken, and to this I attribute its causing no

evacuation by stool, and less by urine than the preceding dose.

EXPERIMENT 10.

At 4 o'clock P. M. 2 hours after having dined lightly on soup, boiled fowl, &c. my pulse beating, as usual, 92 strokes in a minute, I took one hundred and eight grains of the Seneca in water.

In five minutes, my pulse beat 95 strokes in a minute; in ten 99. Anxious to see what would be the effect of this dose, I endeavoured, but in vain, to retain it on my stomach longer. I became so deadly sick, that a vomiting was excited, which did not cease till I had discharged the whole contents of my stomach. This would have rendered the experiment entirely abortive, were it not for one circumstance, which, as tending to shew how highly stimulating the Seneea is in very large doses, I will mention:—Within a few minutes after having discharged the contents of my stomach, I felt a greater soreness of my throat than usual. On looking into my throat, my tonsil glands were very much enlarged, and somewhat inflamed, but, as being in some degree a constant effect of the Seneca, I did not at first regard it. In twenty-five minutes, however, the soreness of my throat, and great tumefaction of my tonsil glands, gave me much pain, and

to a great degree obstructed a free passage of air into my lungs.

Alarmed at my situation, I immediately had recourse to remedies to reduce the swelling, which, after some difficulty, I accomplished ; but the soreness of my throat remained for several days, and finally terminated in ulceration.

The Seneca Snake-Root was said by Linnaeus, and since by several other authors of credit, to be sialagogue. As I have taken but very little notice of that effect in my experiments, it is proper that I should mention here that it does increase the secretion of saliva, to a very considerable degree. Small doses, however, do not appear to have any effect on the salivary glands, farther than as it is confined in its operation to the mouth ; but I have no hesitation in saying, that large doses do affect the salivary glands long after the irritation induced in the mouth is lost, and as long as they continue to accelerate the circulation of the blood.

I have now considered how large doses of the Seneca, in substance, affect the system, and as yet I see nothing which entitles it to much notice as a remedy in diseases : as a stimulant it is too apt to affect the stomach with nausea : as a cathartic it is

too uncertain in its operation ; and, as a sudorific, it is too stimulating.

It remains that I should shew how it may be given so as to prove certain in its operation as a cathartic, without much affecting the bowels with colic, and act as a sudorific without much affecting the circulation of the blood : I mean in increasing the frequency and fulness of the pulse.

To answer these intentions, it is only necessary to give it in small doses, and to repeat them often, and as the gum* (which I believe to be the only active principle which it contains) appears to be more perfectly extracted by boiling in water than by the gastric juice, the decoction deserves a preference.

The following experiments will serve to illustrate the operation of small doses of the Seneca, in decoction.

EXPERIMENT II.

Having boiled one ounce of the Seneca in a pint of water, till it was reduced to half a pint, I took

* I have no other reason for believing that boiling water dissolves the gum of the Seneca more readily than the gastric juice, than that small doses in decoction have greater effects on the system than equal doses in substance ; but I have better reason for believing that the gum is its only active part, as the root becomes insipid after long maceration in water, and as very large doses had no effect upon me after I had obtained all the gum from it.

of the decoction two tea-spoons full, every half hour, for one hour and an half. Its only effect* was to excite a gentle perspiration, without nauseating my stomach, and without perceptibly increasing the action of my pulse.

EXPERIMENT 12.

Of the same decoction I took two tea-spoons full, every fifteen minutes, for one hour and an half. In three quarters of an hour, a very copious discharge of perspiration was excited, which every succeeding dose increased, till I had taken the last. My pulse, during the whole time of its operation, was not increased in quickness, but it became somewhat fuller than at first.

EXPERIMENT 13.

Of the decoction, as before, I took two tea-spoons full, every ten minutes, for one hour and an half. The result of this experiment was : in thirty minutes a copious flow of perspiration ; in one hour my pulse had become considerably fuller and three strokes quicker than at first ; in ten minutes after this, I had an evacuation by stool, and in twenty-five minutes after, two others, but free from the

* I have omitted to mention that the decoction retained all the acrimony of the root in substance, and equally increased the secretion by the bronchiae.

flatulency which usually attends the operation of large doses in substance. No effect was more obvious than that of the increased secretion of urine.

EXPERIMENT 14.

At eleven o'clock, three hours after having breakfasted on bread and butter and coffee, my pulse beating 92 strokes in a minute, I took four tea-spoons full of the decoction, and in ten minutes repeated the dose : In five minutes after, my pulse beat 96 strokes in a minute. In ten minutes more, repeated the dose again : I then became considerably nauseated, my pulse became fuller than natural, and beat 99 strokes in a minute, and my whole body became wet with sweat. In this way I continued to take the decoction for one hour, during which time it operated three times as a cathartic, and very powerfully as a sudorific and diuretic.

I have now finished the recital of all the experiments which the shortness of my time would permit me to make ; and am next to treat of the diseases in which the Seneca may be applied as a remedy. Before entering upon this part of my subject, it is necessary I should premise, that I have never seen it used extensively in practice, and therefore can say but little from my own experience.

I have also to regret that the Seneca has only been used by few of the regular bred physicians of our country, who, whether from the imperfect state of science at the time when they lived, or from their ignorance of its true properties, have ascribed to it virtues which, at this time, few will admit. As an instance of this, I need only mention the sanguine assurances which Dr. Tennant gives us of its efficacy in curing the disease caused by the bite of the Rattlesnake : but of this I shall treat more fully.

In order that a comparative view may be had of the manner in which persons are affected who have been bitten by the Rattlesnake, and in whom an absorption of the poison has taken place, and of the powers of the Seneca, I will briefly enumerate the symptoms ; and as these are given in a very satisfactory manner, by Dr. Barton, in a paper which he has laid before the American Philosophical Society, I beg leave to quote a part of what he has said on the subject.

" When the poison of the Rattlesnake," says he, " has actually been introduced into the mass of blood, it begins to exert its most alarming and characteristic effects. A considerable degree of nausea is a very early symptom. We now discover an evident alteration in the pulse: It becomes full, strong, and greatly agitated. The whole body be-

gins to swell. The eyes become so entirely suffused, that it is difficult to discover the smallest portion of the adnata that is not painted with blood. In many instances, there is an hemorrhage of blood from the eyes, and likewise from the nose and ears. And so great is the change induced in the mass of blood, that large quantities of it are sometimes thrown out on the surface of the body in form of sweat. The teeth vacillate in their sockets, whilst the pains and groans of the unhappy sufferer too plainly inform us that the extinction of life is near at hand."**

The nature of this disease, and the very speedy† manner in which the symptoms, which I have just enumerated, succeed to the bite of the Rattlesnake, when it has been inflicted in a part where there are many absorbents, or where a blood-vessel has been wounded, are amply sufficient to destroy any confidence in the Seneca Snake-Root as a remedy.

I have, as yet, however, supposed the poison to have been thrown into a blood-vessel, or in a part

* See 3d vol. of the Transactions of the American Philosophical Society.

† The bite of the Rattlesnake has often been known to produce death in the course of a few minutes, when the poison has been thrown immediately into a blood-vessel. See Dr. Barton's paper, in the 3d vol. of the Transactions of the American Philosophical Society, for an account of a young man, who, while reposing himself under a tree in the wood, was killed, in a few minutes, from the bite of a Rattlesnake in the neck.

where there are many absorbents, and whence it would be speedily taken into the mass of blood. In this situation, the symptoms which immediately ensue seem to bid defiance to medicines.

But it is not improbable that the Seneca, acting as a very general stimulant, and evacuating very powerfully as a sudorific, &c. may be of some use in the less violent states of the disease.

As it may be deemed rash in a young man of no more experience in medicine than I possess, to controvert what has been advanced by Dr. Tennant, I will now point out some of the circumstances whereby he may have been deceived.

It is now well known, that the Rattlesnake does not alway communicate poison when it bites ;* and it is also ascertained that it takes some days for it to secrete poison enough to prove mortal, after once having bitten an animal. †

* Among a variety of proofs of this, no one appears more satisfactory than one which Dr. Barton has related to me. A young man was bitten in both legs by a Rattle-snake. The leg in which he received the first bite inflamed and swelled to a great degree; whereas the leg in which he received the second bite, immediately after, scarcely inflamed or swelled at all.

† See the American Edition of the Encyclopedia, art. Poison; also art. Serpents.

This is a very evident, and I dare say, a very frequent source of deception. But admitting that the poison has been communicated to some muscular part, as, for instance, the calf of the leg; the constant habit of our Indians of applying ligatures above the bite, and cutting out the part where it was inflicted, may alone have prevented any future ill consequences. † The poison may have lodged amongst ligaments and tendons, and no blood-vessel injured. In this case it may have remained, without being absorbed for any given time, and in all these cases the Seneca may have been given and commended as having cured a disease which was prevented by other remedies, or which, in fact, did not, and probably never would have existed.

The next disease in which Dr. Tennant gave the Seneca is pleurisy. When this is violent, it is not necessary that I should say, the remedy is not only an inefficacious, but a dangerous one. When, however, the action of the pulse has been in some measure subdued, acting (in decoction) as a very powerful sudorific, diuretic, &c. and thereby diminishing the quantity of circulating fluid, it cannot but be an useful remedy. I have never been a witness of its efficacy, but I am well informed that

† For all the causes which may have given rise to deception on this head, see Dr. Barton's paper, in the 3d volume of the Transactions of the American Philosophical Society.

Dr. Archer of Maryland, is in the habit of giving the decoction to patients in pleurisy with decided advantage. I shall say nothing of its use in the gout. This disease has long been considered as a *noli me tangere*, and the disgrace into which specifics for curing it are daily falling, renders it probable that this remedy, in common with a variety of others, has come into use from no good foundation.

The Seneca has of late been much used and commended by Dr. Archer, whom I have just mentioned, in the cure of Cynanche Trachealis. I must confess that I have never seen it used in this disease, and therefore can add nothing to what Dr. Archer has said in favour of its efficacy. The following letter, however, from him to Dr. Rush, is sufficient to show that it is a very valuable remedy.

“ *Harford County, Nov. 22, 1797.*

“ Dear Sir,

“ OUR long and intimate acquaintance induces me to begin a correspondence in the way of our profession. This I conceive may be beneficial, not only to ourselves, but to our fellow creatures; and when we consider that it is the suffering part, this should stir us up to free and open communications. The widow's mite was (in the opinion of the best of judges) acceptable. Every discovery

in the cure of diseases has a tendency, not only to alleviate the pains and sufferings of human nature, but may and should lead us to a better knowledge of diseases from the consideration of the effects of medicines. One discovery may lead to still more important ones, and so on in succession.

" So far by way of introduction.

" The observations I would now communicate to my old and worthy friend, I shall confine to a disease incident only to the younger part of our species, known by the name of Cynanche Trachealis (*vulgo*) the Croup, Hives, or Children's Asthma. I need not enter into a description of the disease, as it is particularly described by medical authors—the limits of a letter will not admit of it. I would only remark, that I believe it to be a topical disease confined to the Trachea Arteria by the formation of a membrane or slough therein ; and in its advanced stage, that this membrane (if it may be so called) descends down the Trachea and into the several ramifications thereof : that it is first formed about the Epiglottis and beginning of the Trachea, and as this membrane increases in extent, it also increases in thickness, until breathing is materially affected, and at last totally suspended, when the disease proves fatal. I also conceive, that this membrane, whether from the peculiar qualities of

its component parts, or from its adhesion to the Trachea, irritates it in such a manner as to cause spasmodic affections at times, so as to occasion more difficult breathing at one time than at another.

" The cure, in my opinion, consists in the separation or solution of the membrane or slough that is formed, or forming, in the arteria aspera. To accomplish this intention, I have found the decoction of the Radix Seneca a very powerful remedy. I make a strong decoction of the root in the following manner.

" B. Pulv. Rad. Sen. 3*lb*s Coque in -

" Aquæ Font. 3*viiij.* Of this I first give a tea-spoonful, and repeat the dose every half hour or hour, as the urgency of the symptoms requires, until it acts as an emetic or cathartic: then repeated in smaller doses so as to keep up the constant stimulus of the Seneca. The stimulus of the Seneca is very diffusive. It extends to the epiglottis and upper part of the trachea, and if the membrane is but recently formed, tends to the solution thereof. If formed, and its texture become more firm and adhesive, the Seneca insinuates itself through it to the trachea, and, by its stimulus there, occasions an increased secretion of mucus.

" This being more fluid and less tenacious than the membrane, renders it more easily separated and broken to pieces, so that it may be discharged and the disease cured. This appears to me to be the operation of the Seneca in the Cynanche Trachealis. The method, therefore, in which I have proceeded, has been according to the state of the disease at the time when I was called. If to a recent attack, I give a tea-spoonful or two of the decoction, every two or four hours, and this treatment has with me generally removed the disease ; but if the disease be of long standing, and the breathing is difficult, with a peculiar harsh and grating sound, and there is a retraction of the upper part of the parieties of the abdomen under the cartilages of the ribs, even in a small degree, I then give calomel freely, and use ung. mercurial. rubbed on the throat and adjacent parts, so as to affect the glands of the mouth and throat as soon as possible. The stimulus of the mercury on the glands produces a discharge of thin mucus between the membrane and the trachaea, and thereby facilitates its separation. In this the effect produced by mercury is the same as that produced by the Seneca ; at the same time that I give the mercury, the decoction of the Seneca is administered as before directed, and in this way I have succeeded even beyond my most sanguine expectations;

" This fall I have had more cases of the Cynanche Trachealis than I have ever known before in our part of the country, and in a majority of these cases, the decoction of the Seneca has succeeded without the use of calomel."

Notwithstanding Dr. Archer seems to differ in opinion from some, as to the Cynanche Trachealis being always a local disease, and with regard to the Seneca acting sometimes mechanically, in removing the slough or membrane from the trachea, still, from his long experience in the disease, and from his known candour in relating the results, no one will have the smallest doubt, but that it is a very valuable and efficacious remedy.

It does not appear to me, that the disease being sometimes a general one with local affection, militates against the use of the Seneca as a remedy in either case; for although a slight fever should attend, I can easily conceive that the profuse sweat (not to mention other evacuations) which it induces, when kept up to a considerable time, may not only counterbalance the stimulus which it imparts to the system, but also reduce the action of the pulse.

In some parts of Virginia the Seneca has lately been used, with very great success, in the cure of the dysentery.

When we consider that this disease is, as Sydenham has justly called it, a *Febris Introversa*, and that it is owing to a preternatural determination of blood to the intestines, it will readily appear, that whatever remedy has a tendency, by inducing sweat, to determine the circulation of the blood more to the surface of the body, without irritating the intestines so much as to increase their inflammation, must be an useful remedy. The Seneca seems to be peculiarly fitted for this, and besides being a very gentle sudorific (I mean in decoction) it tends, by its gentle stimulus, to equalize the circulation of the blood in every part of the body.

It was with this intention that Dr. Moseley, in the West-Indies, gave small and repeated doses of the ipecacuanha, and we have his testimony in favour of the success of the practice. But the Seneca clearly deserves a preference to the last mentioned remedy; as, in the first place, it is less apt to nauseate; and secondly, it is much more certain in its operation as a sudorific. I do not mean to say that it should be used in every stage of the disease; on the contrary, when it has been of but short duration, and is attended by violent symptoms, it cannot but do harm. But when it is mild, and has been in part cured by blood-letting and other remedies, the judicious use of the Seneca will seldom fail of doing much good.

Hitherto, diuretics have been but very little attended to in the cure of the dysentery ; but as they take from the quantity of blood, and that at the immediate seat of the disease, I conceive when they act so gently as not to irritate the intestines, they must be useful. In this respect also the Seneca deserves to be noticed.*

Dr. Tennant gave the Seneca in rheumatism, and also in dropfy, asthma, and marasmus.

When I chose this as a subject to write on, I intended to have considered how far it was applicable to the cure of these diseases, but from the concurrence of several circumstances which caused delay, I am now unable to do it.

I will only observe, with regard to its use in dropfy, that Dr. Percival has made a slight trial of it, but the result was not in favour of its efficacy : and, as a remedy in rheumatism, I have given it in one case only, but the result was more unfavorable than otherwise. From these two instances I do not, however, mean to draw any inferences,

* In speaking of the Seneca in the cure of diseases, unless the substance is mentioned, it may be taken for granted I mean the decoction.

either in favour of, or against it, as they were neither of them decisive.

It is probable that the Seneca may be a better remedy in marasmus; but I know of no facts on the subject. This disease, I believe, is less frequent now in Virginia than formerly; and since Dr. Tennant's time, I have never heard of the remedy's being used.

THE END.

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